

CELLULAR, MOLECULAR, AND MICROBIAL BIOLOGY M.S. - MICROBIOLOGY AND IMMUNOLOGY

or BIOM 590 Research	
BCH 599	Thesis
or BIOM 599 Thesis	
BCH 600	Cell Organization & Mechanisms
BIOM 502	Advanced Immunology
BIOM 540	Microbial Pathogenesis
Total Hours	
30	

General Graduate Program Requirements

Graduate School policies and standards can be found on the Graduate School Policies page (<https://catalog.umn.edu/graduate/school-policies/>).

The minimum GPA for any graduate program is 3.0. Individual programs may require more than a 3.0 to remain in good standing.

The minimum grade for a course to be accepted toward any master's or doctoral requirement is C. The minimum grade for a course to be accepted toward a certificate program is B-. Individual programs may require higher grades for specific courses.

Master of Science - Cellular, Molecular, and Microbial Biology; Microbiology and Immunology Concentration

- All CMMB M.S. students have a common set of requirements: students must take a total of 30 semester credits, including 20 semester credits of courses (includes any course other than Thesis and Research).
- At least half of the non-thesis and non-research credits toward the degree must be at the 500 or 600 level.
- The following credit limitations apply:
 - A maximum of 6 credits of Special Topics (BCH 591, BIOB 591 and BIOM 591).
 - A maximum of 6 credits of Independent Study (BIOB 592, and BIOM 592).
 - A maximum of 10 credits of research and thesis (BCH 590, BIOB 590, BCH 599, and BIOM 599).

Course Requirements

Code	Title	Hours
Core Courses		
Complete all of the following courses:		
BCH 570	Intro to Research	1
or BIOM 570	Intro to Research	
BIOB 547	Experimental Molecular, Cellular, and Chemical Biology	2
BIOM 594	Molecular and Biomedical Sciences Seminar	4
Electives, Research, and Thesis		
Complete 23 credits of elective courses.		23
Elective courses can include any graduate-level course in General Biology (BIOB), Microbiology (BIOM), and Biochemistry (BCH). Suggested courses include:		
BCH 582	Proteins and Enzymes	
BCH 584	Nucleic Acids	
BCH 590	Research	